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RESEARCH MEMORANDUM

TEMPORAL, COGNITIVE AND BEHAVIORAL DIMENSIONS OF TRANSACTION COSTS; TO AN UNDERSTANDING OF HYBRID VERTICAL INTER-FIRM RELATIONS R25

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ABSTRACT

Hybrid vertical inter-firm relations are protracted buyer-seller relationships between firms, intermediate forms if compared with market relations or hierarchical relations. In this article, these relations are analyzed from the perspective of transaction cost economics (TCE). In its received form TCE is unconvincing because it neglects the dynamics of the development of transaction relations, problems of perception and knowledge, and the influence of the process of interaction between transaction partners on (perceived) opportunism. A discussion of relevant aspects of the temporal and cognitive aspects of transactions leads to the proposition that protracted interaction in the context of transaction relations leads to the production of transaction-specific values in the form of knowledge etc., <u>and</u> to safeguards for these values in the form of preferences conducive to the preservation of the relation. Interaction between transaction partners generates information with regard to behavioral characteristics of the parties, and also influences these characteristics. An analysis of hybrid vertical inter-firm relations which takes into account the temporal, cognitive and behavioral dimensions yields a set of novel propositions to be compared with and tested against propositions based on received TCE, in which these dimensions of exchange are omitted.

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added theory is necessary if the needs of empirical studies of transaction cost issues are to be met (Williamson 1985, p. 116)

1. INTRODUCTION

Hybrid Vertical Inter-Firm Relations and Transaction Cost Reasoning

Frequently, firms enter into protracted relationships with other - formally independent - firms to which they contract out certain tasks. This kind of protracted relationship (a 'hybrid vertical inter-firm relation') fits into a strategy of balancing flexibility with predictability. The firm putting out the job can concentrate on its core business and technology and because of its more limited commitments in terms of for example specialized assets enjoy an enlarged capability to adapt to changes in market circumstances and technological developments. At the same time the firm creates a high level of predictability in its interaction with part of its environment. Thus protracted hybrid vertical inter-firm relations can intuitively be understood as a viable answer to the environmental uncertainty and complexity many firms have to cope with [Borys and Jemison (1989); Powell (1990)].

At the same time, this kind of relationship between formally independent firms poses some interesting theoretical problems. The perspective assumed in this article is that of transaction cost economics (TCE), a theory that has repeatedly been invoked in the description and explanation of make-or-buy decisions and the resulting economic structures, of which the hybrid vertical inter-firm relationship is an example [Anderson and Schmittlein (1984); Heide and John (1990); Joskow (1987); Masten (1984); Masten, Meehan and Snyder (1989); Monteverde and Teece (1982a), (1982b); Stuckey (1983); Walker and Poppo (1991); Walker and Weber (1984), (1987)].

From a TCE point of view the hybrid vertical inter-firm relationship is the outcome of a trade-off between different production technologies with differential production costs and different governance structures with differential transaction cost features [Williamson (1975), (1985), (1991)]. In a nutshell, TCE makes us expect hybrid vertical relations if economies can be realized by applying a special purpose technology (as opposed to a general purpose technology), but if this special purpose technology is not fully specific to one individual trading partner. Thus an independent firm, aggregating demand from various client firms, can presumably achieve economies of scale or scope inaccessible to an entity integrated into the client firm.

However, to the extent that investments are transaction-specific a pure market relationship would pose unacceptable hazards to the trading partners. Consequently a governance structure somewhere between the extremes of market and hierarchy will be implemented, leading to a protracted mutual commitment between otherwise independent parties.

Private Ordering

In this article we will not take issue with the main contention of TCE, viz. that the occurrence of hybrid relations has to do with transaction-specific investments, and that these investments create transaction costs due to opportunism and bounded rationality. However, we find the way in which the governance structures associated with hybrid vertical inter-firm relations are conceptualized in TCE altogether unsatisfactory.

Williamson (1985: Chapters Seven and Eight) assumes that the parties to hybrid relations make use of the mechanism of 'private ordering' to safeguard transaction-specific investments. The parties can for instance decide to use a 'hostage' to endorse a commitment.

For instance, a supplier to the automobile industry investing in a press specific to the needs of a particular client firm, can ask that client to invest in a mould specific to the supplier's press. This investment functions as a 'hostage', and imposes restraints on the propensity to opportunism [Klein, Crawford and Alchian (1978)]. 'Quasi-integration', investments by a client firm in specific tools to be used by a supplier, is a frequently used form of private ordering [Masten (1984); Monteverde and Teece (1982b); Palay (1984)].

By thus carefully crafting the relationship, a balance between mutual dependencies is created or maintained, and the need for third-party intervention omitted. In essence, exchange relationships are analyzed as if taking place in a social and legal vacuum. Williamson's assumption of a 'legal vacuum' can be seen as a reaction to the fiction of legal centralism that is routinely applied in more traditional economic and legal analysis [Galanter (1981)].

But, as Kronman (1985) points out in his systematic analysis of private ordering, mechanisms like the exchange of hostages or collaterals can, in the absence of a legal system and social relations, at best lead to a shaky equilibrium. And although contract law seems to play a limited role in many business relations [Beale and Dugdale (1975); Macaulay (1963)], there is also evidence that complex long-term relations primarily based on the force of contractual arrangements can be viable [see e.g. Goldberg and Erickson (1987); Joskow (1985), (1987), (1988); and Mulherin (1986)].

We will nevertheless in this article keep focussing on the exchanging dyad typical of received TCE. The reason for this is not that we think that the wider social and legal environment is unimportant. In some accounts of hybrid vertical inter-firm relations social norms are pointed at as an explanatory factor of prime importance. Thus Dore (1983: 470) places a social norm at the center of his explanation of Japanese subcontracting: '[the Japanese] most commonly say: benevolence is a duty. Full stop. It is that sense of duty - a duty over and above the terms of written contract - which gives assurance of the pay-off which makes relational contracting viable'. In a wider context, North (1990) effectively explains the emergence and development of institutions, including social norms, as a necessary measure to reduce transaction costs and thus enable the ongoing division of labour on which prosperity is based.

But explicit and systematic attention to social norms falls outside the scope of this article. By copying the explanatory strategy of received TCE we can more forcefully bring to the fore what we see as necessary changes in and additions to this theory.

The Temporal, Cognitive and Behavioral Dimensions

We propose to incorporate into TCE three dimensions abstracted from in the private ordering view: the temporal, cognitive, and behavioral dimensions.

The temporal dimension is conspicuously absent in received TCE. The 'private orders' discussed by Williamson (1983, 1985) are a product of rational and conscious ex ante choices made by the parties; TCE provides no theory of the development of exchange relations over time.

This situation is unsatisfactory. If the private ordering mechanisms that form the basis of hybrid vertical relations have to be installed before the actual transactions begin, this puts a very high strain on the rational faculties of the parties. Not only do they have to foresee which possible future developments may invoke opportunistic behavior and to design the requisite safeguards, they also have to take account of and neutralize the possibility that the very safeguards implemented invoke new forms of opportunism [Klein (1988); Kronman (1985)]. If we want to avoid a creeping assumption of hyper-rationality, the temporal dimension of exchange has to be given explicit attention.

A second amendment to received TCE proposed in this article concerns the cognitive dimension of exchange. In Williamson's view, exchange relations are purely instrumental [Bowles and Gintis (1990)]. However, if we take seriously the bounds to the rationality of the parties to a transaction and the uncertainty and complexity of their environment, this position seems untenable. Trading partners can be an extremely useful source of information [Håkansson (1989)], and because of this the state of knowledge and the preferences of a party can be changed in and by the interaction with these firms. This process may have an effect on both the transaction specificity of investments and the safeguards necessary to protect these investments, and thus should be made endogenous to the analysis.

Thirdly, it seems reasonable to assume that the effects of interaction go beyond the considerations of given mutual assumptions with regard to opportunism. In the first place protracted interaction is likely to reveal information regarding the parties' real inclination towards opportunism. In the second place the very process of interaction may over time alter this inclination. These two effects, alluded to in this article as the 'behavioral dimension' of exchange, should also be incorporated into TCE.

Purpose and Composition of this Article

The purpose of this article is to add a few spoonfuls of complexity to the simplifying assumptions employed in TCE [Hirschman (1984)]. Parsimony requires that more complex assumptions should only be introduced if the conditions under which observations will deviate significantly from the basic model as well as the direction of these deviations are specified [Kahneman et al. (1986)]. Therefore we will conclude the next three Sections of the article with a number of explicit propositions. These propositions are at variance with those that can be generated by received TCE, and thus can form the basis of a test of our restated theory against received TCE.

The application of TCE to hybrid vertical inter-firm relations seems to be a useful strategy for our purpose, because we expect the temporal, cognitive and behavioral aspects that we want to discuss to play a particularly important role in these relations. Hybrid relations lack a clearly dominant disciplinary force like competition on the market or authority within hierarchies. Arguably, cognitive limitations are most critical under these circumstances, and an understanding of temporal and behavioral aspects of exchange relations is most crucial.

A second reason to choose hybrid inter-firm relations as the field of application in this article is that we hope to construct a mid-range theory (as compared with the more general TCE) of this class of relations in the future, and test this theory empirically against received TCE. This goal, however, lies beyond the scope of this article.

Below we will first (Section 2) discuss the temporal dimension, because the assumption of a more 'dynamic' perspective has important ramifications for the other two dimensions. Next we will turn to the cognitive dimension of exchange relations, and challenge the assumptions with regard to knowledge, preferences and opportunism that are routinely made in received TCE (Section 3). Building on the ideas pertaining to the cognitive dimension, we will subsequently (Section 4) discuss the behavioral dimension. Concluding remarks follow in Section 5.

2. THE TEMPORAL DIMENSION: TRANSACTION AND RELATION

Transactions within Relations

Purportedly, the transaction is the basic unit of analysis in TCE. But in this article we will focus on the exchange relationship rather than on the transactions taking place between the parties.

This shift could be justified by pointing out that Williamson himself, too, tends to slide towards a discussion of relations rather than of transactions. A tell-tale formulation is to be found in Williamson (1985: 17, emphasis added), where '[e]very exchange relation' is said to qualify as an issue to be investigated in transaction cost economizing terms. Indeed, embedding transactions in a time consuming process of exchange, in the context of a transaction relationship, is required to make TCE coherent. Without that, one cannot meaningfully employ the customary parlance of setting up an agreement "ex ante", and coping with problems of control "ex post", with the complications of monitoring, haggling, renegotiation, handling hostages, arbitration, etc.

The problem of bounded rationality treated in TCE is that one cannot foresee all the contingencies that may occur during execution of an agreement to transact. In other words: new facts or conditions may be perceived in time. But if that is allowed, one must also allow for shifts in the perception and expectation of opportunism, and for shifts of preference or goals. The claim of TCE is not that all people are opportunistic all of the time, but that some people are opportunistic some of the time, and since one does not know a priori what will be the case, one should reckon with the possibility of opportunism. As a transaction relationship develops in time, the (perceived and/or objective) risk of opportunism is bound to develop as well (note that it does not necessarily decrease, but may also increase in a cumulation of suspicion).

Furthermore, the issue of transaction specificity of assets acquires substance only in the perspective of the possibility of repeated transactions in the future. If such a perspective is lacking, and it is known that an investment is specific to a single, isolated transaction, the problem is trivial: the investment will not be made unless it is recouped in the price to be agreed for that transaction hic et nunc. Non-triviality of the problem of asset specificity demands the perspective of possible but uncertain ongoing transactions in the future.

Thus in the remainder of this article we will focus on the hybrid relationship rather than on the individual transactions taking place in the context of this relationship.

Habitualization and Institutionalization

Business relations are initiated, developed, and possibly (but not necessarily) strengthened through interaction. Interaction per se refers to the temporal dimension: a series of successive mutually related individual actions. If the importance of the temporal dimension is conceded, it means that a given transaction relationship can never be explained completely on the basis of cross-sectional analysis, transversal in time, alone. The form of a relationship that can be observed at a given moment has grown through a process of cumulative causation over the time the parties interact.

In the context of a TCE-like analysis two consequences of a process of interaction should be emphasized. Firstly, interaction tends to entail the investment of resources in the relationship, resources that subsequently cannot be put to use elsewhere. If nothing else, at least attention is 'invested' in a relationship. But frequently also other non-redeployable resources will be invested [Håkansson (1982)]. Secondly, interaction tends to generate lock-in effects which may neutralize the risks associated with such transaction specific (or rather: relation specific) investments[1]. This lock-in effect may be the result of habitualization and institutionalization processes, discussed in this Section. Other lock-in effects that arise in the process of exchange are preferences for preservation of the relationship (Section 3), and information pertaining to the propensity to opportunism as well as changes in this propensity itself (Section 4).

If we take into account the complexity and uncertainty of the world, it is self-evident that parties to a hybrid vertical relationship will look for strategies for economizing on their limited rational faculties. One such strategy is habitualization. According to Berger and Luckmann (1966) any human activity that is repeated frequently is subject to habitualization. Habitualization frees the individual from a plethora of decisions, and thus provides 'a psychological relief'. In a process of interaction habitualized actions may be reciprocally typified by interacting parties:

> *A watches B perform. He attributes motives to B's actions and, seeing the actions recur, typifies the motives as recurrent. As B goes on performing, A is soon able to say to himself, "Aha, there he goes again". At the same time, A may assume that B*

> *is doing the same thing with regard to him. From the beginning, both A and B assume this reciprocity of typification. [....] The most important gain is that each will be able to predict the other's actions. Concomitantly, the interaction of both becomes predictable* [Berger and Luckmann (1966, pp. 53-54)]

Habitualization is a process on the level of the individual, and can in the context of hybrid vertical inter-firm relations be expected between, say, a sales manager of the supplier firm and a purchaser of the buyer firm. If the process were to stop here, the influence of protracted interaction between firms would arguably be very limited. Functionaries hold a certain office only for a limited time, and are restricted in their freedom to perform their task according to their own preferences.

But Berger and Luckmann (1966) continue their analysis by assuming that other parties join A and B's social universe:

> *The institutional world, which existed in statu nascendi in the original situation of A and B, is now passed on to others. [...] This means that the institutions that have now been crystallized [...] are experienced as existing over and beyond the individuals who "happen to" embody them at the moment. In other words, the institutions are now experienced as possessing a reality of their own, a reality that confronts the individuals as an external and coercive fact* [Berger and Luckmann (1966, p. 55)]

If patterns of interaction between two firms are institutionalized, the predictability of behavior is no longer dependent on the identity of the incumbents. The reciprocal typification of actions and the concomitant predictability becomes a general characteristic of the relationship between the firms, regardless of variance at the individual level.

Opportunistic behavior will be much less attractive in an institutionalized context, as it threatens to disrupt the relationship, and leads to higher future transaction costs.

Implications for TCE

As we have seen, specificity of investments tends to increase with the age of the exchange relationship. At the same time habitualization of actions and institutionalization of the relationship raise the costs associated with opportunism, and thus make explicit safeguards redundant. These two observations give rise to the following general propositions, which cannot be logically deduced from received TCE ("explicit safeguards" refer to written contracts and private ordering arrangements):

Proposition I: At a given level of transaction-specific investments, explicit safeguards are expected to be lower if the relationship is older.

Proposition II: At a given level of explicit safeguards, higher transaction-specific investments are to be expected if the relationship is older.

If habitualization and institutionalization were all there is to exchange relations, the risk of opportunism would still loom large, and abstinence from explicit safeguards would still under many circumstances be a foolish strategy. But there are additional factors rendering stability to hybrid vertical inter-firm relations. In the next two sections we will turn to these additional factors.

3. THE COGNITIVE DIMENSION: INNOVATION AND LEARNING

Transactions and Innovation

Williamson (1985, pp. 143-144) grants that 'the study of economic organization in a regime of rapid innovation poses much more difficult issues than those addressed here' and that '[n]ew hybrid forms of organization may appear in response to such a condition [...]. Much more study of the relations between organization and innovation is needed'. Since at present business operates under such a 'regime of rapid innovation', further insight is of some importance.

Innovation entails changes in knowledge and competence, and the new perspectives that these changes yield entail change of preference. Thus, in a context of innovation, we can no longer take knowledge and preferences as given; they must be made endogenous. That is what a truly dynamic theory requires. In our study of transactions we further need to include the role of exchange relations in the formation of knowledge and preferences, and to deal with the implications for uncertainty and opportunism, the resulting effects on transaction costs, and the choice of governance structures.

In TCE, bounded rationality is taken to arise from the scarcity or cost of information and limited capacity for information processing. If rationality were unbounded, all possible contingencies could be foreseen, even those arising from opportunism, and could be incorporated in a contract prior to commitment. But there is more to the boundedness of rationality that is relevant to TCE.

Since transactions are embedded in ongoing relations of exchange, there is time for knowledge and preferences to develop and affect the governance of transactions. In time, the bounds of knowledge, preferences and perceived risk of opportunism may shift. In decision making, economics focuses on the choice between given alternatives, but the prior issue concerns the identification of alternatives and the objective of choice[2]. In a dynamic context, new outcomes of known options for action, new options and new goals may be perceived as time proceeds.

The point now is that the value of transaction relations lies not only, and perhaps not primarily, in satisfying wants according to present preferences and knowledge, but also, and perhaps primarily, in developing new perceptions, understanding and preferences. This may be called the 'transcendental' role of transactions or transaction relations (in a Kantian sense). In the present section we concentrate on the formation of knowledge (perception, understanding), and in section Four we turn to the formation of preferences.

Transactions and Knowledge

We now need a theory of knowledge (epistemology), and in particular a theory of acquisition and change of knowledge (genetic epistemology; for a more detailed discussion see Nooteboom (1991a), which draws on work by Michael Polanyi and Jean Piaget). Implicitly, neoclassical theory and TCE assume that while information may be costly to obtain, and capacity to process it may be costly or limited, all information is in principle available to all 'from the shelf' in a given form, containing or generating objective truth. The underlying empiricist epistemology, however, is defunct and has been since the philosopher Kant. In terms of Kantian 'critical' philosophy: mainstream economics is uncritical of perception and knowledge [similar criticism of the epistemological foundations of neoclassical economics and TCE was given earlier by Etzioni (1988) and Hodgson (1988) among others]. Perception and thought are conditioned by categories of understanding, in the double sense of being made possible and being limited by them. Apart from giving form or coherence to otherwise incomprehensible sense impressions, categories perform the heuristic function of shutting out impressions that do not fit the present purpose. To be receptive to and explicitly aware of all available bits of information all the time, regardless of context or purpose, would eliminate all purpose. The problem increasingly is not how we can obtain all available information, but how we can ignore irrelevant information. We set agendas for rational evaluation according to the context, and do not consider what is not on them.

To be effective, organizations also have to define what is relevant in order to shut out noise, and this requires some coordination of the perceptions and perspectives of individuals within the firm. This function is performed by administrative and social routines, supported by the use of symbols and rituals. As a result, different organizations not only have different preferences, but entertain different perceptions, and interpret the same phenomenon differently. What is perceived, known and communicated in a firm depends on its past, embodied in its culture and routines, and on its context. As suggested by Pfeffer and Salancik (1987), there will be some variance of perception and preference within a firm, according to the function, i.e. the resource that is represented. Different functions will interpret the interest of the firm from different perspectives, but on the basis of a common experience, position and orientation of the firm. To be effective one needs a focus, but having a focus means not seeing everything.

Categories of knowledge are often acquired and developed in practice (in learning by doing), whereby they are context-dependent and cumulative, and may be 'tacit' (cf. Michael Polanyi)[3]. It is difficult to be critical of one's own knowledge or skills if they are tacit.

As taught by Rogers (1983), the first stage in the adoption of something new is awareness of a need and the availability of the novelty to satisfy it. With tacit knowledge this may be problematic, and one may need a transaction partner who takes a different perspective and has different but complementary experience, to achieve awareness. Next, when awareness has been created and one wants to adopt a novel way of doing things, tacit knowledge is hard to adopt from someone else, particularly by explanation and specification of rules. If at all, tacit knowledge can be transferred only by ostension (showing how one does it), or after it has been made more explicit. When knowledge is cumulative it is difficult to transfer because it requires underlying capabilities to be effective. When knowledge is tacit or cumulative or both (the two tend to go together), transfer is more easily performed by the transfer of the person (or the firm) in which the knowledge is embodied, or by working together[4].

Implications for TCE

The complications that arise in the acquisition of knowledge, due to categories of perception and understanding and their variance between firms, and the tacit, contextual and cumulative nature of a good deal of knowledge, have several implications for TCE. Hybrid vertical inter-firm relations carry more value, and a greater preference for continuity of the relationship, than meets the eye from the perspective of comparative statics of standard TCE.

Firstly, there is what we called a transcendental value of transaction partners: they are a source of perceptions and perspectives that are complementary to one's own, based on a different context and experience. In other words: partners enhance one's potential. A partner may be chosen for his expected capacity for such enhancement, rather than only for his capacity to satisfy demands presently perceived [Nooteboom (1991b)]. This may contribute to a symmetry of dependence, by which safeguards against opportunism may be less needed than without this added value of a transaction relationship. It may contribute to an explanation of an observed lack of more visible safeguards.

Secondly, to benefit from this a relationship must be lasting to some extent, since the enhancement of potential takes time, and investments must be made to establish and improve effective links for the exchange of knowledge. This also may reduce (perceived) risk of opportunism, and may serve to explain otherwise inexplicable continuities of transaction relations in spite of apparent opportunities elsewhere.

Thirdly, there are obstacles to the make-or-buy decision: due to problems of technology transfer, as a result of tacitness, contextuality and cumulativeness of knowledge, one may not be able to produce an input, no matter how specific it is to one's own needs. On the other hand, one may not be able to contract production out to an independent producer, no matter how few transaction specific investments are required. Thus we may well observe transaction relations in spite of highly transaction-specific investments, either because the relation is chosen for its (unique or indispensable) potential for learning, or because the user would simply not be able to produce the item himself. Conversely, one may see several firms in an industry producing an input that does not require investments specific to the input for any one firm, because there simply is no independent supplier capable of producing and delivering it.

All these considerations, while complicating the analysis, lead to several propositions pertaining to the relationship between the characteristics of the (process of) knowledge and information production and diffusion within a certain industry and the characteristics of hybrid vertical inter-firm relations. For the sake of simplicity, the characteristics of the industry will be treated as a dichotomous variable: an industry either operates under a regime of rapid innovation, or does not.

Proposition III: In innovative industries vertical relations will tend to be more durable than in industries with a slower pace of innovation.

Proposition IV: In innovative industries the level of asset specificity within vertical relationships will be higher than in industries with a slower pace of innovation.

A third proposition pertains to the relationship between inter-firm relations and the process of innovation, regardless of the characteristics of the industry:

Proposition V: Within a given industry, firms maintaining hybrid vertical relationships will be more innovative than firms lacking this kind of relationship.

4. THE BEHAVIORAL DIMENSION: TRUST AND BONDING

The Concept of 'Trust'

In this section we propose that 'opportunism', one of the main behavioral assumptions of TCE, should be treated as a variable rather than a constant[5].

The reason for this proposition is that intuition and casual empiricism point out that in real-world business relations opportunism is not always present to the same degree. Firms spend resources to select 'trustworthy' partners in the first place [Dasgupta (1988)], and subsequently engage in policies aimed at increasing the mutual trust in the relationship [Lorenz (1988)]. If economic agents were invariably opportunistic, this kind of behavior would not make sense. But if we assume a continuum of motivational structures, with pure opportunism at one extreme and pure trustworthiness at the other, a discriminating strategy of trust may under the right circumstances be the rational choice.

To 'trust' another party means to engage voluntarily in a course of action the outcome of which is contingent on choices made by that other party, and the possible damage caused may be greater than the benefits sought[6]. Such a course of action can only be confidently chosen if the truster believes that the other party will give due weight to his interests, or, in other words, is of a 'trustworthy' character.

A purely opportunistic party maximizes its own payoff without allowing for considerations of fairness or hesitation to breach agreements. A purely trustworthy party would ex post, after a commitment has been made, disregard its own payoff and pay attention only to the moral dimension of exchange. That is, it will stick to the substance of the agreement even if it incurs considerable cost in doing so.

All real-world economic agents would be expected to be located somewhere in between these two extremes. This means that their individual payoff carries weight in their decision-making, but that they are sometimes prepared to incur a cost in order to punish or reward other parties. Experimental evidence indicates that people in fact act in this way, and that opportunism is not a characteristic of all individuals to the same degree [Antonides (1991); Deutsch (1973); Frank (1988); Kahneman et al. (1986)].

In the above we have mostly referred to 'parties', leaving the question of the level of aggregation unresolved for the time being. However, the experiments with regard to non-opportunistic behavior have all been conducted with individual respondents, while we are primarily interested in inter-firm relations. The individual and the organizational levels interact through 'mechanisms [that] are easy to intuit, if ponderous to spell out' [Dore (1983, p. 466)]. Can we also assume a continuum of motivational structures of firms?

In our opinion, there are good reasons for this assumption. The goals of a firm, particularly a small firm, are in part a reflection of the personal and role-defined goals of its most influential manager(s) [Simon (1964)]. If many individuals have preference schemes incorporating considerations of fairness, the firms they manage may very well display parallel constraints on the more 'egoistic' goal of profit maximization.

In larger firms decision-making is to a high degree governed by organizational rules, procedures, and routines. These rules, etc. are forms of institutionalized behavior; they reflect past experience and learning, and are not routinely questioned by the organization members whose behavior is programmed by them [Cyert and March (1963); Nelson and Winter (1982)]. It is very well conceivable that some rules, etc. lead to more harshness vis-à-vis suppliers and clients than others.

In the case of individuals, trustworthiness and the ability to engage in trusting behavior are relatively stable character traits. The basis for these traits is laid in early childhood [Eisenstadt and Roniger (1984, pp. 31-32); Petermann (1985)]. But recurrent and salient experiences (e.g., recurrent 'betrayal') may presumably change these traits even in adults. Thus, trustworthiness should be considered to vary not only between individuals, but also within individuals over time. This kind of change, however, will normally be only incremental, and should be if the concept of 'trustworthiness' is to have meaning.

Organizational rules and procedures change over time as a result of, for example, changes in the external environment of the firm, or personnel changes, particularly in top-management. Therefore just like in the case of individuals, trustworthiness of firms should be treated as a variable longitudinally, within a given firm, as well as cross-sectionally, between firms.

Assuming this perspective on opportunism and trustworthiness we will in the subsections below consider the effects of differences in trustworthiness of the exogenous kind (i.e. independent on the interaction in a specific relationship) and changes in trustworthiness of an endogenous nature (i.e. resulting from the process of interaction in a specific relationship).

Exogenous Trustworthiness and Reputation

Consider a world with two kinds of economic agents: trustworthy agents and opportunistic agents. The first kind of agent would in a Prisoner's Dilemma always play the cooperative move, the other would always play the defective move[7]. Clearly, both kinds of agents would prefer to interact with trustworthy parties only. But if it is impossible to distinguish between the two ex ante, exchange dyads will be formed by chance, the opportunists will on the average do better than the trustworthy, and assuming some kind of natural selection mechanism the latter will gradually disappear, at least, if interactions between pairs of individuals are not repeated [Axelrod (1984)].

If on the other hand parties recognize previous interactants, they will choose to continue interaction if the other has in the past proved to be trustworthy. This means that stable relations will be formed only between trustworthy agents, and that these pairs will do better than the unstable relationships involving at least one opportunist.

The relevance of this line of reasoning to the analysis of hybrid vertical inter-firm relations is clear. Although a number of clues may be available, at the individual level [Frank (1988)] as well as that of the firm, it will most of the time be difficult to judge the trustworthiness of a prospective exchange partner. However, the experience gained in protracted interaction gives first-hand information on the other's inclination to opportunism[8]. Thus exchange relationships between trustworthy parties will tend to be more durable than pure market relations; high levels of asset specificity are possible without expensive safeguards; and transaction costs can be low.

There is a difference between the argument expounded here and that which rests on reputation effects. Rowe (1989) employs the assumption that parties are invariably opportunistic, but that they may choose to follow rules of action which make them behave as if they were not. This course of action enables them to reap the same benefits as those that would accrue to the truly trustworthy. The argument hinges on reputation effects because 'the only reason an agent can have for maintaining his rule of action is that his failing to do so might adversely affect the beliefs of others that he will maintain that rule in the future' [Rowe (1989, p. 24); see also Klein (1985)].

While not denying the relevance of reputation effects, we feel the concept is somewhat overstretched in Rowe's analysis. The effectiveness of reputation effects depends among other things on the efficiency of information diffusion; on the number of players; and on characteristics of the exchange (frequency, homogeneity of the good or service, ambiguity of performance measures). Clearly reputation effects are no panacea for all transaction problems caused by opportunism [Williamson (1985, p. 396)].

The reputation argument complicates the analysis, because reputation and experience based trust can lead to the same effect, i.e. relatively low safeguards at a given level of asset specificity. If reputation effects were perfect, the process of interaction would yield no new information about the other party's trustworthiness, and parties would feel safe to invest in specific assets even in young relationships. If we can measure the importance of reputation effects in different industries, the reputation and the trust effect can be partly disentangled: we would expect relatively high levels of asset specificity without proportional safeguards in young relationships to occur in industries with efficient reputation effects, but not in those industries where serious impediments to reputation effects exist.

If trustworthiness is a character trait influenced by education and social and cultural factors in general, the average level and variance of trustworthiness of individuals is likely to be different in different countries or regions. In the case of firms, differences between industries may also occur. Consequently, we can on the basis of the above generate two propositions with regard to hybrid vertical inter-firm relations:

Proposition VI: In industries in which reputation effects play an important role relatively low safeguards at a given level of asset specificity in young relationships will occur more frequently than in industries in which reputation effects are less important.

Proposition VII: The incidence of hybrid vertical inter-firm relations in a particular industry will differ between countries or regions.

In the formulation of these propositions, reference to specific measures of trustworthiness has deliberately been omitted. Although a number of instruments have been developed, the direct measurement of trust and trustworthiness at the level of individuals is not without problems [Petermann (1985)]. The same problems are to be expected with regard to the measurement of trust and trustworthiness at the level of firms (or organizations and institutions in general). In empirical research on inter-organizational relations, direct measures of trust have been used by some [Noorderhaven (1992)], while indirect measurement was preferred by others [Zucker (1986)].

In the context of hybrid vertical inter-firm relations, the possibility of obtaining direct measures of trustworthiness leads to an additional proposition:

Proposition VIII: Firms engaged in hybrid vertical relations will, on average, be more trustworthy than comparable firms in their country, region, or industry.

Endogenous Trustworthiness and Bonding

In section III we allowed for learning in the sense of a shift of knowledge. But then we should also allow for shifts of preferences, which constitute a change of objectives or values. This brings us to the effect that a transaction relationship may have on the commitment to that relation. Commitments may grow stronger, which we call 'bonding', or they may grow weaker. As the commitment to the relationship in the process of bonding increases, the exercise of opportunism is reduced. This relieves the problem of bounded rationality: with less threat of opportunism, there is less one needs to foresee and take into account. One feels confident to look less at safeguards against opportunism and more at opportunities for further learning or improvement of quality.

There is bonding in a weak and in a strong sense. In 'weak bonding'[9] potential opportunism (its scope, or the inclination towards it) is unmodified, and in that sense preferences or values have not shifted, but out of self-interest opportunism is not exercised. The reason may be that one has already invested so much in the relationship that the switching cost or loss of reputation involved in its breaking up due to the exercise of opportunism is too great. Weak bonding corresponds to the 'lock-in' of standard TCE.

In 'strong bonding' preferences have shifted to narrow the boundaries or scope of opportunism: one wants to be less opportunistic, apart from direct self-interest. Strong bonding may be individualized, relating only to a specific partner in a specific transaction relation. Or it may be generalized, relating to similar relations in general, because experience has led to the adoption of a new behavioral norm or a new organizational procedure. Of course, experience may also work the other way round: the generation of antipathy or hatred, or the breakdown of some previously held norm.

The possibility of a shift from opportunism to trustworthiness or vice versa has empirical implications for TCE, but it is difficult to generalize these implications. If relations 'go well', attention to safeguards against opportunism may rapidly subside. Firms which have experienced no failed relations may become naive: few safeguards may be installed in spite of highly transaction specific investments. While this may be warranted within a given market and region where the experience was obtained, a step outside may be punishing. Conversely, one may observe sudden breakdowns of inter-firm relations owing to inducements that seem only slight: betrayal of trust on some minor point may cause a shift in perception, preference or behavioral norm.

On the whole, it seems reasonable to assume that natural selection weeds out unfounded preference shifts, and that in most cases increases in trustworthiness and reliance on trust are mutual and sound.

If no direct measures of trustworthiness are available, the assumption of decreasing opportunism in durable exchange relations does not lead to new propositions with regard to hybrid vertical inter-firm relations. However, propositions I and II formulated in section II are endorsed. Relatively low safeguards are possible in 'old' relationships not only because of habitualization and institutionalization, but also because of preference shifts.

On the other hand, if direct measurement of trust and trustworthiness is possible, the proposition on the basis of the above discussion is obvious:

Proposition IX: The level of trustworthiness of the parties to hybrid vertical inter-firm relations will tend to increase over time, as does the level of (mutual) trust.

5. CONCLUSION

The conceptualization in received TCE of hybrid vertical inter-firm relations as 'private orders' is unconvincing because it neglects relevant temporal, cognitive, and behavioral aspects of transactions. A discussion of these three dimensions of exchange relations leads to a number of propositions with regard to the kind of relationships investigated. These propositions can form the basis of more specific hypotheses to be tested in the context of an empirical investigation into a particular category of relations in a particular geographical region and within a particular time-frame.

Thus, the observations and arguments propounded above can be seen as a translation of 'pure TCE' into a much less general mid-range theory, pertaining to a limited class of phenomena. This has indeed been our primary goal in writing this paper, and we intend to put our ideas to the test of empirical research in the near future.

At the same time, we think that some of our criticism of received TCE transcends the realm of hybrid vertical inter-firm relations. The conceptualization of market relations as well as hierarchical relations in TCE is overly simplifying and schematic. Some criticism to that effect can be found in Bradach and Eccles (1989); Granovetter (1985); Hodgson (1988); Macneil (1981); and Schreuder (1991). Perhaps explicit attention to temporal, cognitive and behavioral aspects will also be advisable in fleshing out the relatively 'pure' forms of market relations and hierarchical relations.

NOTES

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1. Williamson (1979: 240) with 'lock-in' refers to the (mutual) dependency caused by transaction-specific investments. We use the term also to refer to other mechanisms forging a bond between the parties.

2. The difference between choice and the prior identification of alternatives is related to the well-known difference between risk and more radical uncertainty (as discussed by Frank Knight and Keynes). Under risk the class of alternatives and their outcomes is known, and uncertainty is limited to the question which outcome will be realised with what probability. Under uncertainty one does not know all alternatives or outcomes.

3. Williamson is one of the rare economists to have recognised the relevance of Michael Polanyi's work for economics, but has not fully carried through the implications of tacit knowledge for TCE.

4. This has important implications for the diffusion of new technology and for related business services, particularly with respect to small business. Cf. Nooteboom, Zwart and Bijmolt (1992); Nooteboom, Coehoorn and Van der Zwaan (1991).

5. Williamson (1985: 47-49) in fact does not assume that opportunism is a constant. However, the variability of opportunism is neutralized in TCE by assuming that it is impossible to distinguish ex ante opportunistic parties from trustworthy parties. Therefore, safeguards should be installed in every case.

6. This definition of 'trust' is consistent with those used in most of the literature. For a discussion of the concept, its applications, and empirical evidence see e.g. Barber (1983); Deutsch (1973); Gambetta (1988); and Petermann (1985).

7. For an extensive discussion of the Prisoner's Dilemma see Axelrod (1984).

8. Williamson (1985) also makes this observation, in a footnote to page 59. But his only conclusion is that the organization of economic activity is more complicated as a result.

9. By 'weak bonding' we mean bonding in the weak sense, based on self-interest, but the bond thus created may be quite strong. Conversely, by 'strong bonding' we mean bonding in the strong sense, based on a lesser desire or taste for opportunism, but the bond thus created may be quite weak.

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